

Claims 1-6 are rejected under 35 U.S.C. §103 as being unpatentable over Nesbitt in view of Nakamura. Nesbitt discloses the claimed invention with the exception of the particulars of the materials utilized. However, one of ordinary skill in the art would, in view of Nesbitt's disclosure, recognize that other materials known in the art could have been utilized in the invention so long as the cover comprised a harder inner layer of Shore D hardness of 60 with a softer outer layer. As disclosed by Nakamura the use of hard materials such as that claimed for the inner cover layer is known in the art. It would have been obvious to one of ordinary skill in the art to have utilized such known materials in the manufacture of Nesbitt's ball absent a showing of unexpected results.

Regarding claims 2 and 3, it would have been obvious to one of ordinary skill in the art to have increased the thicknesses of Nesbitt's layers to increase the durability of the ball.

Claims 1-6 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of copending application Serial No. 08/542,793. Although the conflicting claims are not identical, they are not patentably distinct from each other because removal of the additionally claimed features with their corresponding loss of function would have been obvious to one of ordinary skill in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The obviousness-type double patenting rejection is a judicially established doctrine based upon public policy and is primarily intended to prevent prolongation of the patent term by prohibiting claims in a second patent not patentably distinct from claims in a first patent. In re Vogel, 164 U.S.P.Q. 619 (CCPA 1970). A timely filed terminal disclaimer in compliance with 37 C.F.R. §1.321(b) would overcome an actual or provisional rejection on this ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 C.F.R. §1.78(d).

However, Applicant is of the opinion that the Examiner may have oversimplified the present invention in view of the prior art and respectfully requests reconsideration of the obviousness rejection. In addition, Applicant has attached a terminal disclaimer in order to overcome the provisional obviousness-type double patenting rejection noted by the Examiner.

The Present Invention

The invention of this application (claims 1-6) is directed to improved multi-layer golf ball cover compositions and the resulting multi-layer golf balls produced thereby. The novel multi-layer golf balls of the invention include a first or inner layer or ply of a low acid (16 weight percent acid or less) ionomer or ionomer blend. A second or outer layer or ply is included in the multi-layered golf balls comprised of a comparatively softer, non-ionomeric thermoplastic or thermosetting elastomer such as polyurethane, a polyester elastomer or a polyesteramide. Preferably, the inner layer or ply includes a blend of low acid ionomers and has a Shore D hardness of 60 or more and the outer cover layer comprises a polyurethane and has a Shore D hardness of about 45. The multi-layer golf balls of the invention can be of standard or enlarged size.

It has been found that multi-layer golf balls having inner and outer cover layers exhibit higher C.O.R. values and have greater travel distance in comparison with balls made from a single cover layer. In addition, it has been found that use of an inner cover layer constructed of a blend of low acid (i.e., 16 weight percent acid or less) ionomer resins produces softer compression and higher spin rates than inner cover layers constructed of high acid ionomer resins. Furthermore, it has been discovered that use of a softer polyurethane outer layer adds to the desirable "feel" and high spin rate while maintaining respectable resiliency. The soft outer layer allows the cover to deform more during impact and increases the area of contact between the club face and the cover, thereby imparting more spin on the ball. As a result, the soft polyurethane cover provides the ball with a balata-like feel and playability characteristics with improved distance and durability.

Consequently, the overall combination of the inner low acid ionomer resin cover layer and the outer cover layer made from polyurethane elastomers and non-ionomeric resins results in a standard size or oversized golf ball having enhanced resilience (improved travel distance) and durability (i.e. cut resistance, etc.) characteristics while maintaining and in many instances, improving the ball's playability properties. Specifically, it has been found that the combination of a low acid

ionomer blend inner cover layer with a soft, relatively low modulus ionomer, polyurethane based elastomer outer cover layer provides for good overall coefficient of restitution (i.e., enhanced resilience) while at the same time demonstrating improved compression and spin. The outer cover layer generally contributes to a more desirable feel and spin, particularly at lower swing speeds with highly lofted clubs such as half wedge shots.

Although Spalding (assignee of the instant application) and others had previously attempted to produce standard size golf balls having multi-layered covers containing one or more ionomer resins exhibiting the overall distance, playability and durability characteristics desired, such attempts have been somewhat unsuccessful in comparison with the present invention. For example, Spalding in U.S. Patent No. 4,431,193 (Nesbitt) disclosed a multi-layer golf ball which is produced by initially molding a first cover layer on a spherical core and then adding a second layer. The first layer is comprised of a hard, high flexural modulus resinous material such as type 1605 Surlyn® (now designated Surlyn® 8940). Type 1605 Surlyn® (Surlyn® 8940) is a sodium ion based low acid (less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi. An outer layer of a comparatively soft, low flexural modulus resinous material such as type 1855 Surlyn® (now designated Surlyn® 9020) is molded over

the inner cover layer. Type 1855 Surlyn® (Surlyn® 9020) is a zinc ion based low acid (10 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 14,000 psi.

The Spalding (Nesbitt) '193 patent teaches that the hard, high flexural modulus resin which comprises the first layer provides for a gain in coefficient of restitution over the coefficient of restitution of the core. The relatively soft, low flexural modulus outer layer provides essentially no gain in the coefficient of restitution but provides for the advantageous "feel" and playing characteristics of a balata covered golf ball.

Unfortunately, however, while the balls shown in the examples of the Nesbitt '193 patent do exhibit some enhanced playability characteristics with slightly improved distance (i.e. enhanced C.O.R. values) over a number of other known multi-layered balls, the balls suffer from poor cut resistance and relatively short distance (i.e. lower C.O.R. values) when compared to two-piece, unitary cover layer balls. These undesirable properties make the ball produced in accordance with the specific examples of the Nesbitt '193 patent unacceptable by today's standards.

The present invention relates to a multi-layer golf ball which has a hard, low acid, inner layer and a relatively soft, non-ionomeric elastomer such as a polyurethane, a polyester elastomer or by a polyester amide outer layer. As more particularly indicated in Example 4,

use of non-ionomeric elastomers (Formulations 23-25) to produce the outer cover layer, results in molded golf balls having softer compression, improved durability, higher spin, with similar COR values. The data indicates that a very good multi-layer ball can be made using non-ionomeric elastomers (i.e., polyurethane, etc.) as the material for the outer cover layers.

In addition, this application is directed to both standard size and oversize ball embodiments.

Furthermore, Nakamura (U.S. Patent No. 5,068,151) merely relates to a two-piece golf ball having a unitary cover comprised of a lithium neutralized ionomer resin having a Shore D hardness of at least 60. Nakamura is not directed to multi-layer golf ball technology and/or golf balls having a soft, non-ionomeric elastomer outer cover and fails to address the particular characteristics of such a ball.

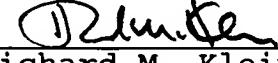
Lastly, kindly also note that an increase in cover thickness does not necessarily result in an increase in durability. Moreover, increasing the cover thickness of a multi-layered golf ball also effects such properties as weight, spin, C.O.R. (distance), compression, etc. As noted in the application, properties such as weights, etc. are strictly limited by the U.S.G.A. Thus, one can not merely increase the cover thickness to obtain enhanced durability of a regulation golf ball.

Consequently, Applicant respectfully submits that the present invention is not merely a combination of the teaching of Spalding's '193 patent and Nakamura. Furthermore, the combination of Spalding's '193 patent and Nakamura will not result in the present invention. Thus, reconsideration of the rejection is respectfully requested.

CONCLUSION

In view of the above comments and the attached Terminal Disclaimer, it is believed that this application is in condition for allowance. Therefore, the Applicant respectfully requests favorable reconsideration and allowance of this application.

Respectfully submitted,
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